



Polio Eradication

Focus on India

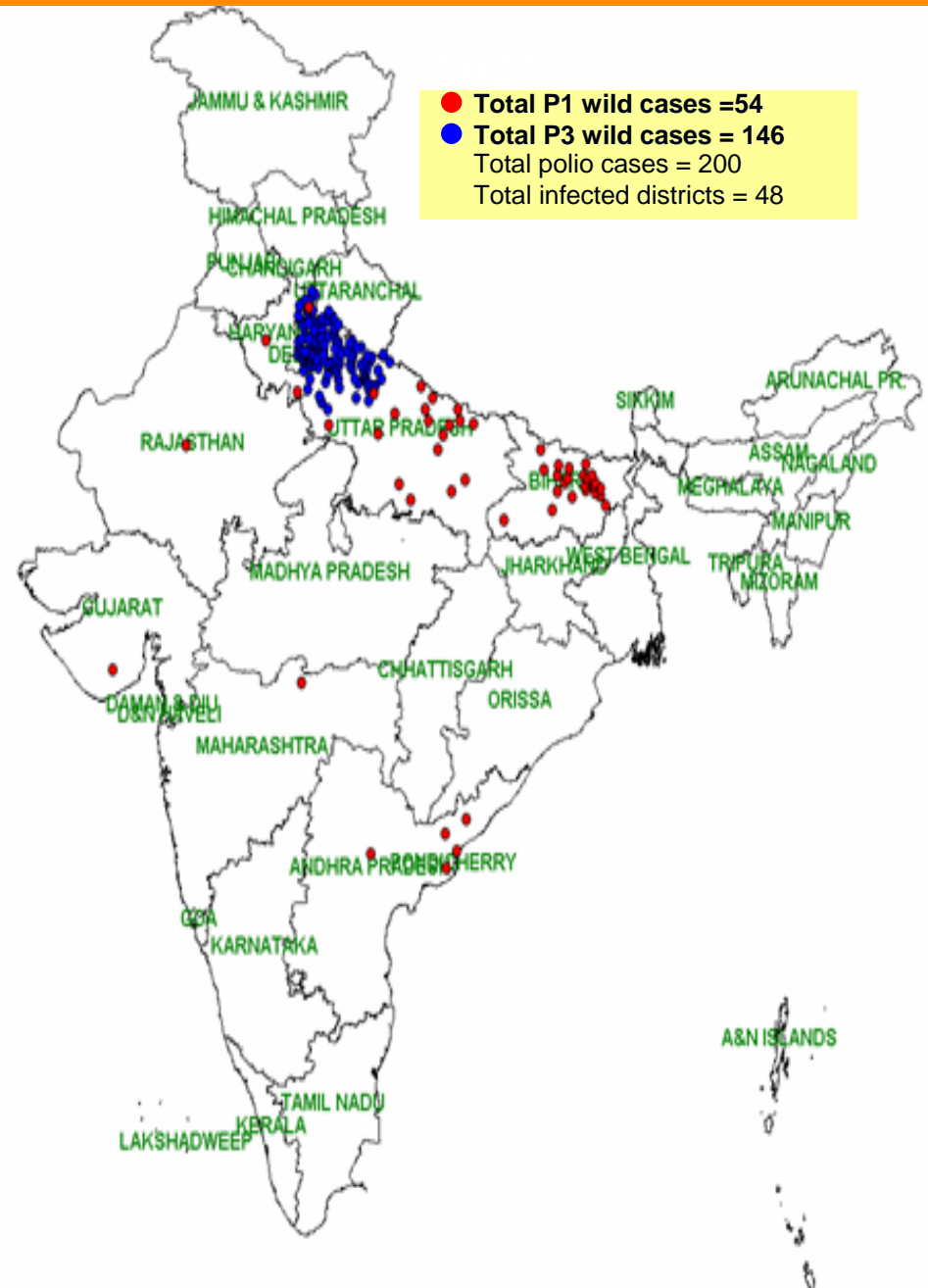
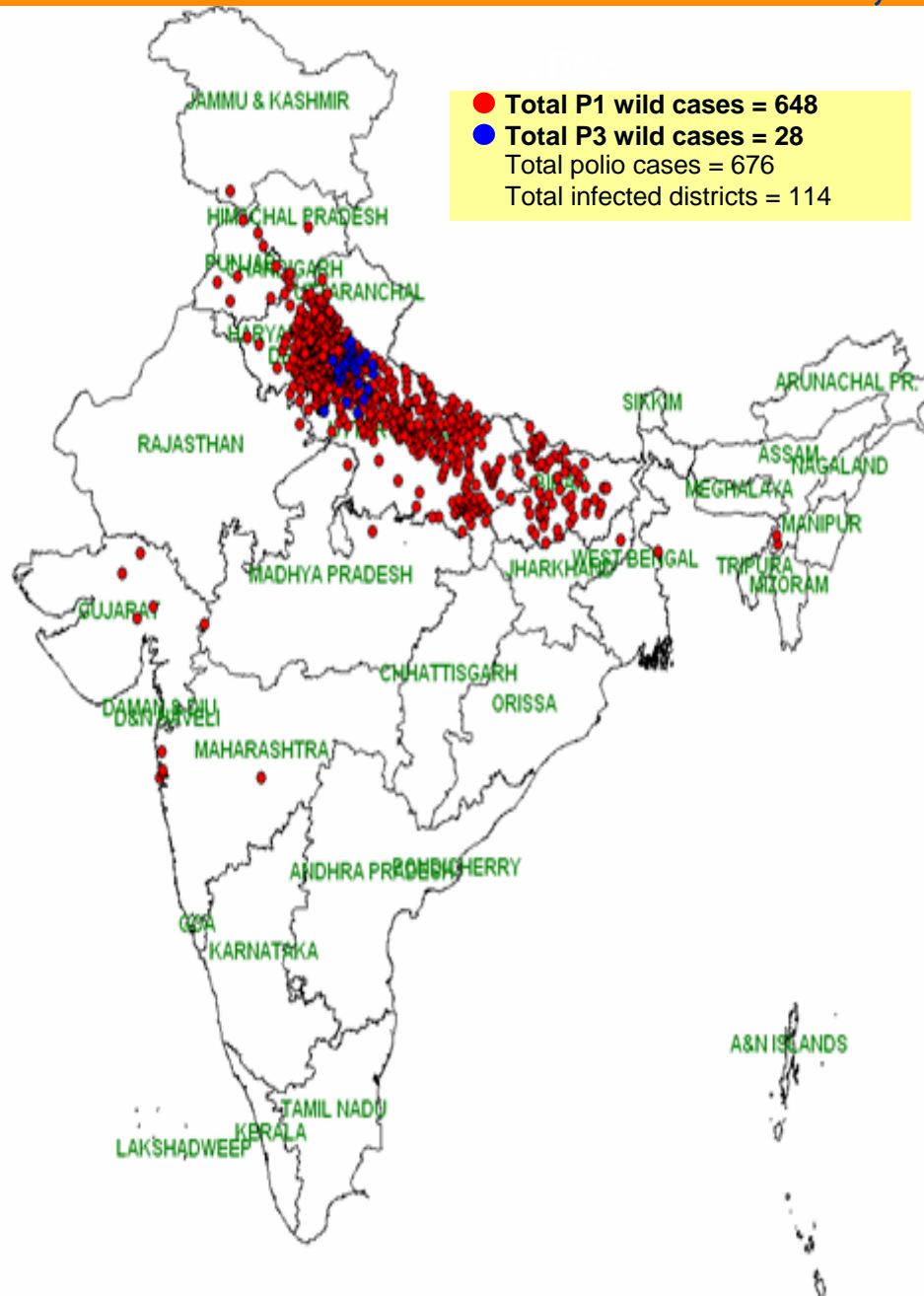


Dr. Naveen Thacker
President IAP 2007



Confirmed Polio Cases

India, 2006-2007



Western Uttar Pradesh



The Challenges : Western UP

Peculiar demography of western UP:

- High density of population -- overcrowding
- High birth rate – 31.4 / 1000 (UP)
- Huge birth cohort – 230,000 births per month in Western UP
- 1 % missed children in western UP translates in to > 120,000 children (> 370,000 in UP)

The Challenges : Western UP

- Very high % of Muslim population (25-48%)
 - ❖ Low literacy,
 - ❖ Rumors – Suspicion – Reluctance -- Resistance.
- Poor Sanitation
- High Non-Polio EV rates.
- High prevalence of diarrhea & malnutrition
- Administrative issues

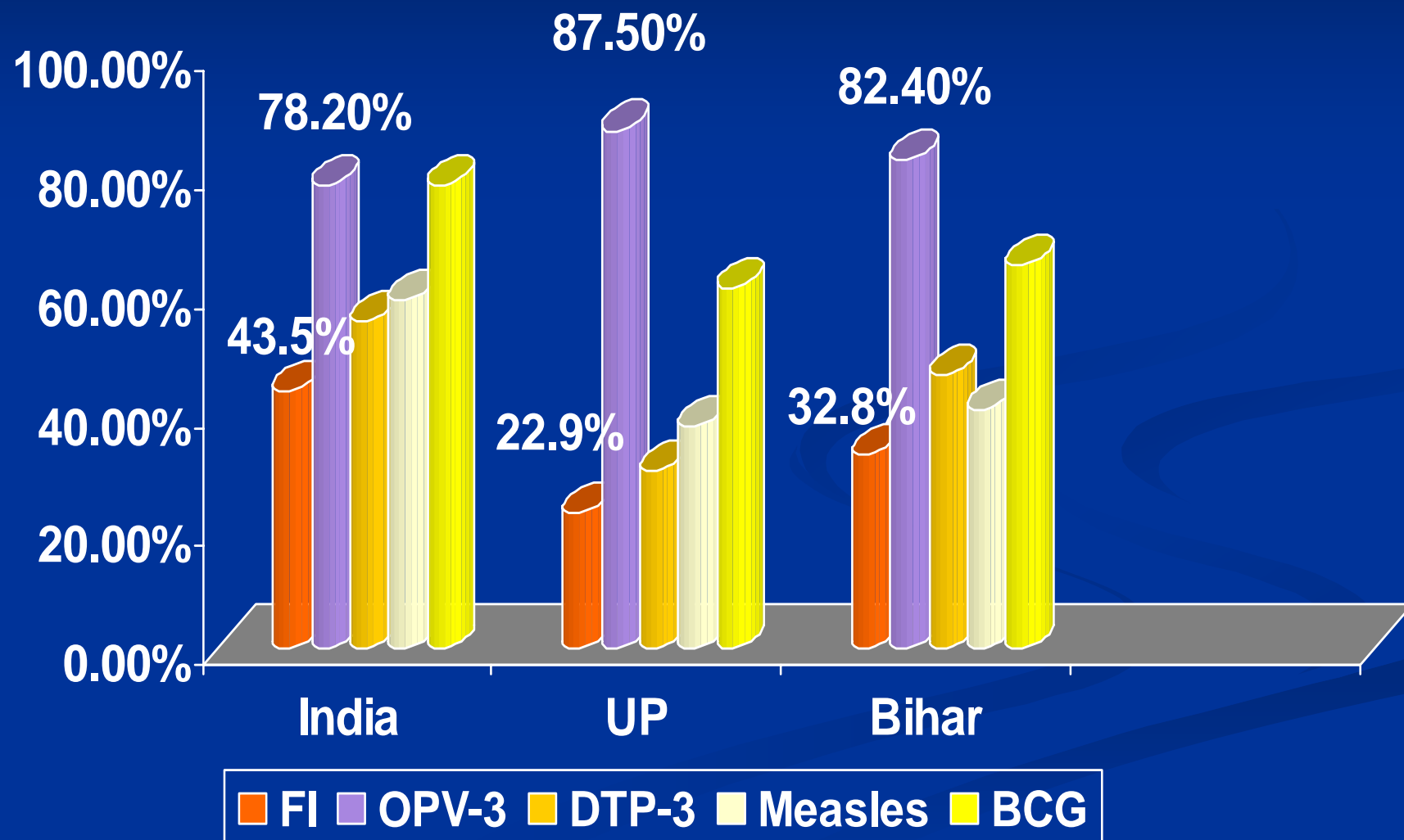
Challenges- Bihar Problem of Accessibility- Frequent natural disasters



Certain well-established concepts about OPV went hay-wire in UP !

- OPV efficacy (per dose, tOPV): from 33% to 9% in UP
- Even mOPV-1 failed to prevent 2006 mini-epidemic of type-1 in UP
- No herd effect of OPV visible on ground

Routine Immunization : 2005-06, NFHS-3



High density of population

**+
High birth rates**

-Malnutrition;
-Diarrhea;
-High NPEV
interference

Large number of young infants & newborns

Low RI (<14 weeks) →
Inadequate vaccination
(Operational impediments) →

← Poor vaccine uptake

Large pool of susceptible/ poorly immunized young infants

Poor sanitation
+
'Moist' environment →

Facilitation of WPV transmission

High force, speed & intensity of WPV transmission

Operational Issues

+

Poor Efficacy of OPV

(Low individual protection, No herd effect)

+

High force of transmission

To wipe out disease needs almost 100% coverage with 10-12 doses
of OPV below 1 yr of age



Transmission still not broken

Speed of protection slower than wild virus spread.

Other Reasons....

- Lack of investment in research
- Lack of contingency plans in case of adversity.
- Non-utilization of scientific data from Indian studies and local "wisdom".

Time is running out.....

- Issue of achieving polio eradication in India is a complex one and there are no clear cut answers !!
- Any intervention suggested should also take in account feasibility, acceptability by local people, health workers, and state government
- “desperate situations demand desperate measures!!”

The way forward!

- Declare a deadline, show some urgency
- Achieving Polio eradication should be declared a national priority
- Matching the force and speed of WPV by reaching the newborns and infants by multiple numbers of vaccine doses
- Achieving and maintaining high coverage is must -- all operational issues needs to be addressed

The way forward!

- Drastic measures to strengthen routine immunization on war footing
- Use a multi-pronged strategy to address low vaccine efficacy, including :
 - Explore options of high titer mOPV in core endemic districts of UP and Bihar.
 - Use IPV in tandem with mOPV

Appropriate Research

- Annual assessment of immune status of vaccinees:
 - sero-prevalence surveys (Indian Council of Medical Research, ICMR).
- Immune responses to : tOPV, mOPV-1, mOPV-3, IPV

Will IPV Be the Answer?

- Never assessed to break WPV transmission in tropical countries.
- But why not use all weapons when you are at war !!
- Challenge: How to reach >85% target population in troubled regions?
- Issue is complicated:
 - ❖ Will require major shift in strategy: IEC
 - ❖ No. of doses & timing – still unresolved!

Acceptance of an injectable vaccine in endemic region:

- A coverage of 88% was achieved in Vaccination drive against JE in several districts of UP
- What is needed: a sound, effective IEC strategy, high motivation & will (without discrediting current OPV program)



Thank You!